

Suggested work for chemistry students new to Woodhouse in September 2022

Before you join us on the chemistry A level course in September 2022, we have three tasks for you to complete. You should bring the completed tasks with you in September.

1.

You should be able to...	Activity
<ul style="list-style-type: none">Recall the formula of the ions frequently used in A level chemistry	Memorise the attached list of ions.
<ul style="list-style-type: none">Write chemical formulae.	Please complete the attached work sheets.
<ul style="list-style-type: none">Write balance equations using chemical formula	Please complete the attached worksheet.

2. We would also like you to **revise** the following GCSE topics and **complete the set assignments** using Seneca learning.

- Fundamental Particles
- Isotopes & Mass Number
- Relative Masses
- Balanced Equations
- Percentage Yield
- Atom Economy
- Ionic Bonding
- Covalent & Dative Bonding
- Carbon Structures
- Metallic Bonding
- Physical Properties

You will need to go to: app.senecalearning.com/join-class and use this code to join our class. You can assign yourself to either group, both are the same and can use either the link or the code.

Group 1 app.senecalearning.com/dashboard/join-class/6k2439vu2y
CODE 6k2439vu2y

Group 2 app.senecalearning.com/dashboard/join-class/ben44n6va9
CODE ben44n6va9

3. The first part of the AQA A level specification states:

“Appreciate that knowledge and understanding of atomic structure has evolved over time”.

Research the history of the atom and produce a poster clearly illustrating your findings.

IONS – CHARGE TABLES

Simple ions

1+		2+		3+	
Lithium	Li ⁺	Beryllium	Be ²⁺	Boron	B ³⁺
Sodium	Na ⁺	Magnesium	Mg ²⁺	Aluminium	Al ³⁺
Potassium	K ⁺	Calcium	Ca ²⁺	Gallium	Ga ³⁺
Rubidium	Rb ⁺	Strontium	Sr ²⁺	Iron (III)	Fe ³⁺
Caesium	Cs ⁺	Barium	Ba ²⁺		
Silver	Ag ⁺	Copper (II)	Cu ²⁺		
Hydrogen	H ⁺	Iron (II)	Fe ²⁺		
Copper (I)	Cu ⁺	Lead	Pb ²⁺		
		Zinc	Zn ²⁺		

Polyatomic ions

3-		2-		1-	
Nitride	N ³⁻	Oxide	O ²⁻	Fluoride	F ⁻
Phosphide	P ³⁻	Sulfide	S ²⁻	Chloride	Cl ⁻
		Selenide	Se ²⁻	Bromide	Br ⁻
				Iodide	I ⁻
				Hydride	H ⁻

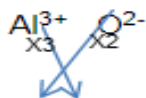
1+		3-	
Ammonium	NH ₄ ⁺	Phosphate (V)	PO ₄ ³⁻
Hydronium/oxonium	H ₃ O ⁺	Phosphate (III) / phosphite	PO ₃ ³⁻

2-		1-	
Carbonate	CO ₃ ²⁻	Hydrogen carbonate	HCO ₃ ⁻
Sulfate (VI)	SO ₄ ²⁻	Hydrogen sulfate	HSO ₄ ⁻
Sulfate (IV) / Sulfite	SO ₃ ²⁻	Nitrate (V)	NO ₃ ⁻
Chromate (VI)	CrO ₄ ²⁻	Nitrate (III) / Nitrite	NO ₂ ⁻
Dichromate (VI)	Cr ₂ O ₇ ²⁻	Hydroxide	OH ⁻
Ethanedioate	C ₂ O ₄ ²⁻	Manganate (VII)	MnO ₄ ⁻
		Ethanoate	CH ₃ COO ⁻

Writing formulae 1

Use the table of ions on the next page to write the formula of the following ionic compounds. Use the general rule of cross-multiply and then simplify where possible.

Eg: Aluminium oxide:



1	a	potassium iodide		2	a	potassium sulfate	
	b	sodium oxide			b	magnesium sulfate	
	c	aluminium bromide			c	magnesium hydroxide	
	d	magnesium chloride			d	copper (II) nitrate	
	e	silver oxide			e	zinc carbonate	
	f	iron (II) oxide			f	potassium hydroxide	
	g	iron (III) oxide			g	sodium carbonate	
	h	calcium sulfide			h	aluminium hydroxide	
	i	copper (II) chloride			i	ammonium hydroxide	
	j	lithium fluoride			j	ammonium chloride	
	k	barium chloride			k	aluminium sulfate	
	l	lead sulfide			l	iron (III) nitrate	
	m	zinc iodide			m	ammonium nitrate	

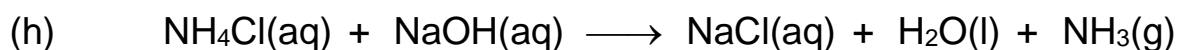
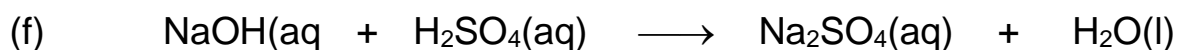
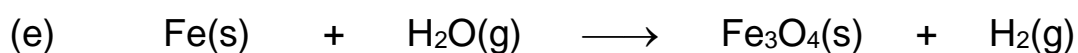
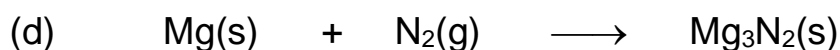
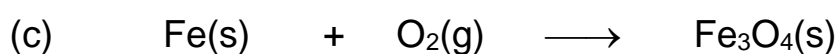
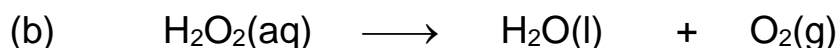
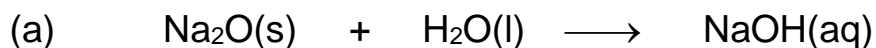
Writing formulae 2

Write the formula of each compound in the space provided:

- (a) Sodium nitrite/sodium nitrate(III)
- (b) Lithium iodide
- (c) Calcium bromide
- (d) Barium phosphate(V)
- (e) Potassium hydrogencarbonate
- (f) Magnesium nitrate(V)
- (g) Sodium sulfate(VI)
- (h) Aluminium chloride
- (i) Potassium hydroxide.....
- (j) Sulphur dioxide
- (k) Calcium oxide
- (l) Ammonium hydrogensulfate
- (m) Boron trihydride
- (n) Ammonium carbonate.....
- (o) Sodium chromate(VI)
- (p) Tin (II) hydroxide
- (q) Phosphorus (III) oxide.....

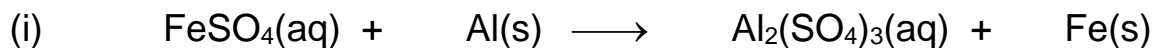
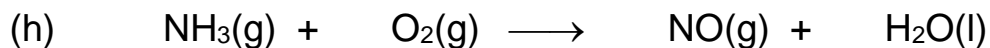
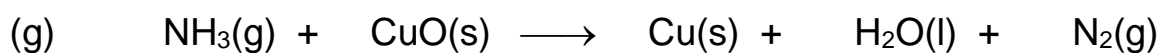
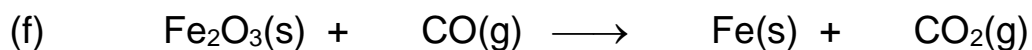
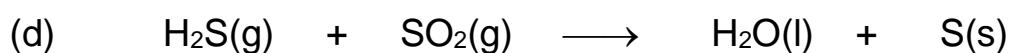
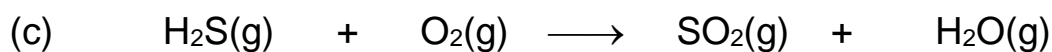
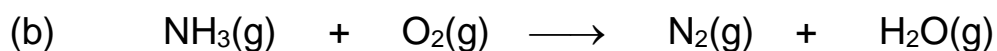
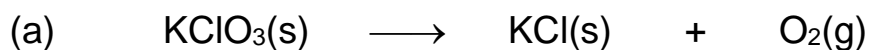
Writing equations 1

Balance the following equations:



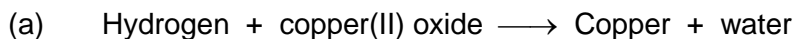
Writing equations 2

Balance the following equations

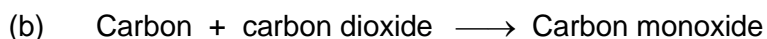


Writing equations 3

Write balanced equations for the following reactions:



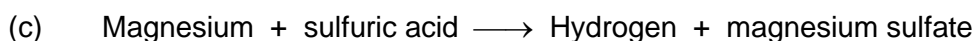
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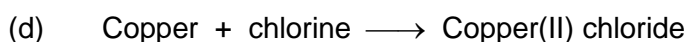
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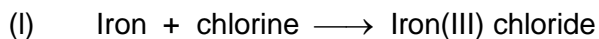
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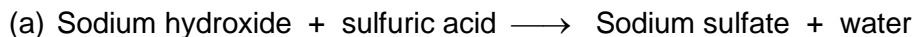
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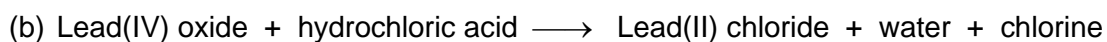
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Writing equations 4

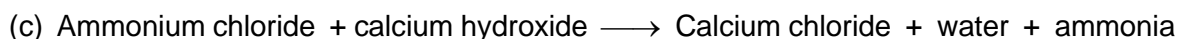
Write balanced equations for the following reactions:



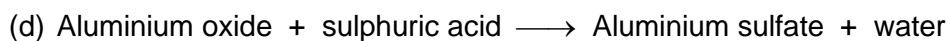
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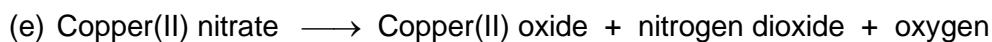
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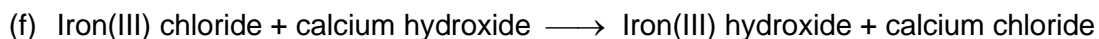
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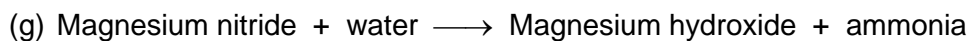
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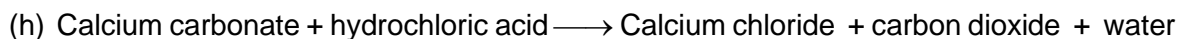
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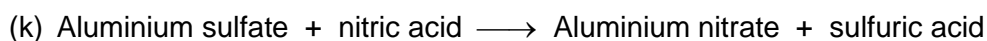
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